

AD-A156 509

DESERT EMERGENCY - LACK OF WATER - HOW TO FIND AND
COLLECT WATER PLANTS A. (U) BEN-GURION UNIV OF THE
NEGEV SEDE BOQER (ISRAEL) JACOB BLAUST. Y GUTTERMAN

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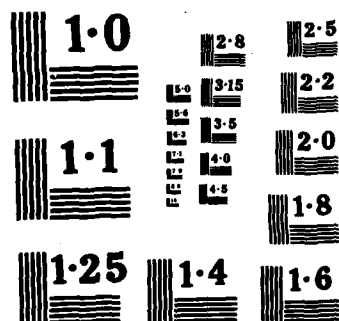
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AD-A156 509

Ben-Gurion University of the Negev
The Jacob Blaustein Institute for Desert Research
Sede Boqer Campus 84990, ISRAEL

Desert Emergency - Lack of water — How to Find and Collect
Water. Plants and Human Survival in the Desert.

The Principal Investigator and Contractor:
Professor Yitzchak Guterman

Contract Number: DAJA 45-93-C-0051

1st Periodic Report
From November 1983 to August 1984

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1. Scientific work - From the topics presented in the research program we chose to concentrate, ~~during the first period~~, on the subject of collecting transpiratory water from desert plants,

a. With the purpose of developing a simple method for everyone by which it is possible to choose, from a large group of plants, the particular plant which should be covered by PVC in order to get the maximum possible yield of transpiratory water.

The water condition at the root system is one of the major factors influencing transpiration. However, since the roots of a plant such as Retama raetam can reach 25 meters, it is impossible to directly determine the water condition in the root system. Therefore it is important to find signs on the leaves and stems that could indicate the water condition in the root system of different desert plants. It is possible to relate anatomic or morphologic traits of the plants with the water condition of the roots. Research of this sort will enable us to find factors that would be easily determined by sight in order to identify the plants most feasible to be covered for giving the maximum yield of transpiratory water.

b. In the closed sack the branches overheat, which damages the plant and stops the transpiration flow. Another aim of the research is to develop a method for obtaining maximum yield of transpiratory water, that would be based on scientific knowledge as related to rates of transpiration in accordance with air humidity, temperature, radiation intensity and time of day that the plant is covered.



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In accordance with the data collected we can determine if a given plant should be covered and on which side (north, south, etc.).

c. It is important to improve the method of covering the plant in order to get the maximum transpiratory water.

2. In the next stage we will exploit the knowledge gained to develop a similar method by which we can use plants in order to find groundwater close to the surface.

3. For the field work carried out simultaneously with the laboratory work, in addition to the principal investigator, two technicians are also working on the project - Mr. Aitan Bar Levav and Mr. Amir Chaklai. For this work we need to purchase thermohydrographs, thermometers, and other specific equipment.

Since, some of the equipment needed for this research has already been purchased with the university budget, I am pleased to inform you that without changing the budget requested, I am able to purchase the equipment needed for the research.

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